

What is claimed is:

- 1 1. A method of testing a computer, the computer having a controller, the method
2 comprising:
3 adjusting a reference voltage signal from a first level to a second level in
4 response to an output from the controller in the computer, the first level being a level
5 of the reference voltage signal during normal operation of the computer;
6 testing operation of a receiver in the computer with the reference voltage
7 signal set at the second level, an input of the receiver being connected to the reference
8 voltage signal; and
9 adjusting the reference voltage signal back from the second level to the first
10 level to enable normal operation of the computer.
- 1 2. The method of claim 1, wherein testing the operation of the receiver comprises
2 testing operation of the receiver that receives a single-ended signal.
- 1 3. The method of claim 2, wherein testing the operation of the receiver comprises
2 testing operation of a differential receiver.
- 1 4. The method of claim 1, further comprising testing operation of a second
2 receiver, the second receiver being connected to the reference voltage signal.
- 1 5. The method of claim 4, wherein the computer comprises a bus having
2 transmission lines for carrying plural signals, the method further comprising
3 transmitting the plural signals over the transmission lines to the receivers.
- 1 6. The method of claim 5, wherein transmitting the plural signals is performed by
2 transmitters in a bus device connected to the bus.

- 1 7. The method of claim 1, further comprising controlling the output of the
2 controller by a software routine.
- 1 8. The method of claim 7, wherein controlling the output of the controller
2 comprises controlling a general purpose input/output (GPIO) port of the controller.
- 1 9. The method of claim 1, further comprising indicating a margin of the
2 reference voltage signal as poor in response to the testing producing an error.
- 1 10. The method of claim 1, wherein adjusting the reference voltage signal
2 comprises a test circuit adjusting the reference voltage signal, the test circuit
3 responsive to the output of the controller.
- 1 11. A computer system comprising:
2 a processor;
3 test software executable on the processor;
4 a circuit to generate a reference voltage signal;
5 a receiver having an input connected to the reference voltage signal; and
6 the circuit responsive to the test software to adjust a voltage level of the
7 reference voltage signal from a first voltage level to a second voltage level,
8 the test software to perform a diagnostic test with the reference voltage signal
9 at the second voltage level to test operation of the receiver.
- 1 12. The computer system of claim 11, further comprising a second receiver having
2 an input connected to the reference voltage signal, the diagnostic test to also test
3 operation of the second receiver.
- 1 13. The computer system of claim 12, wherein the receivers are differential
2 receivers each having a second input connected to a respective single-ended signal.

1 14. The computer system of claim 13, further comprising a bus, wherein the bus
2 comprises transmission lines to carry the single-ended signals.

1 15. The computer system of claim 11, further comprising:
2 a transmitter to generate a single-ended signal, wherein the receiver has a
3 second input connected to the single-ended signal.

1 16. The computer system of claim 11, further comprising a general purpose
2 input/output (GPIO) buffer responsive to commands from the test software to control
3 the voltage level of the reference voltage signal produced by the circuit.

1 17. The computer system of claim 11, wherein the circuit comprises a voltage
2 divider to produce the reference voltage signal, the circuit further comprising a
3 resistor connected to the voltage divider to adjust the voltage level of the reference
4 voltage signal from the first voltage level to the second voltage level.

1 18. The computer system of claim 11, wherein the circuit comprises an
2 electronically adjustable potentiometer responsive to the test software

1 19. The computer system of claim 11, wherein the circuit comprises a digital-to-
2 analog converter responsive to the test software.

1 20. A computer system comprising:
2 a processor;
3 software executable on the processor;
4 means for generating a reference voltage signal; and
5 receiving means having an input connected to the reference voltage signal;
6 wherein the generating means is responsive to the software to adjust a voltage
7 level of the reference voltage signal from a first voltage level to a second voltage
8 level, and
9 the software to perform a diagnostic test with the reference voltage signal at
10 the second voltage level to test operation of the receiving means.

1 21. An apparatus, comprising:

2 a transmitter to transmit a single-ended signal;

3 a circuit to generate a reference voltage signal;

4 a receiver having a first input connected to the single-ended signal, and a
5 second input connected to the reference voltage signal; and

6 a controller to control the circuit to vary a voltage level of the reference
7 voltage signal,

8 wherein the controller is adapted to perform a diagnostic test after varying the
9 voltage level of the reference voltage signal.

1 22. The apparatus of claim 21, wherein the controller is adapted to control the
2 circuit to vary the voltage level of the reference voltage signal from a first voltage
3 level to a second voltage level, the first voltage level corresponding to a voltage level
4 of the reference voltage signal for normal operation,

5 the controller adapted to perform the diagnostic test with the reference voltage
6 signal set at the second voltage level.

1 23. The apparatus of claim 21, wherein the receiver comprises a differential
2 receiver.

1 24. The apparatus of claim 21, wherein the controller comprises software.

1 25. An article comprising at least one storage medium containing instructions that
2 when executed cause a system to:

3 send commands to a circuit to cause a voltage level of a reference voltage
4 signal to be adjusted from a first level to a second level, the first level corresponding
5 to a voltage level of the reference voltage signal during normal operation; and

6 perform a diagnostic test of a receiver having an input connected to the
7 reference voltage signal with the reference voltage signal at the second level.